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Effect of biological preparate “Bio-catena” and fungicide “Ridomil Gold” on fungal diseases of tomato root and rhizosphere

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The research aim was to study the influence of biological preparate “Biocatena” and fungicide “Ridomil Gold” on pathogens which caused fungal diseases of tomato variety “Slivka” root and rhizosphere. Seedling’s root systems were treated by biological preparate 2% “Biocatena” before planting during vegetation stage two to four times 15-20 days intervals. The soil was fertilized by “Organica” before planting. For comparison 2.5 kg/h fungicide “Ridomil Gold” was used. Working solution was 300-500 l/h, 7-10 days intervals. It was relieved that total number of microbes: fungi, bacteria, actinomycetes were accordingly 500, 180 and 210 thousand in uncultivated soil, but pathogenic fungi-400000 in gram absolute dry soil. Microbiological analysis was carried out by I M Vozniakovskaya method. For microbe cultivation artificial and natural solid areas has been used: chapeck, suslo, potato with different concentration 10-2, 10-3, 10-4, 10-5. The total number of microbial colonies in the root and rhizosphere was estimated by thousands of grams on dry soil. The pure cultures of pathogenic fungi have been isolated from the rhizosphere and root of tomato; it was found that the fungal diseases were caused by *Phytophthora infestans* and *Fusarium oxysporum*. Thus, the bio preparate “Biocatena” produced in Georgia had positive effect. Number of pathogen fungi (25000) on the plants root systems was decreased by “Biocatena” and rizosphere-28000 in the flowering phase, using fungicide pathogen fungi were decreased to about 30000, rhizosphere 36000. It should be noted that the development of total number of microbes using fungicide “Ridomil Gold” were inhibited, but development of useful microorganisms using “Biocatena” were not delayed, which helps to maintain a healthy environment and active development for the plant in the flowering phase.

Biography

Guliko Dvali has completed her PhD from Ivane Javajshvili Tbilisi State University, specialist-Microbiology. She is the Head of Microbiology Research Group in Georgian Technical University, Biotechnology Center. She has published more than 19 papers in reputed journals and has great experience in Plant Microbiology field.

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